Configurable Strategy Automator EA

User Guide

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1 INTRODUCTION

This document covers how use the runwiseFX Configurable Strategy Automator EA that is available in the MetaTrader Market Place. The EA allows trading rules to be automated, which are read from a text file as if you wrote them down on a piece of paper. The EA also provides full trade and money management features via a interactive control panel. The EA can also handle multiple accounts, where actions be replicated on multiple instances of MetaTrader for different accounts, on the same computer.

Please ensure that you use the EA on demo account until you have familiarised yourself with its operation, in a variety of trading setups. If you have written your own rules then use strategy tester to test them thoroughly.

Link to the product on the MetaTrader Market Place, including screenshots and video: https://www.mql5.com/en/market/product/9602
Note, the product currently supports the MetaTrader 4 platform.

1.1 Document Conventions

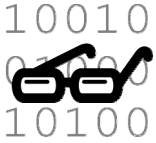
The following icons are used to throughout the document:

Take note – try to remember

Very import to take note of and remember - could cause undesirable results if ignored

Top tip – shortcut or other useful information that can make the system easier to use

Advanced feature/subject – can skip over when you are first learning how to use the system



Technical ‘behind the scenes’ detail that you don’t strictly need to know but maybe interested in

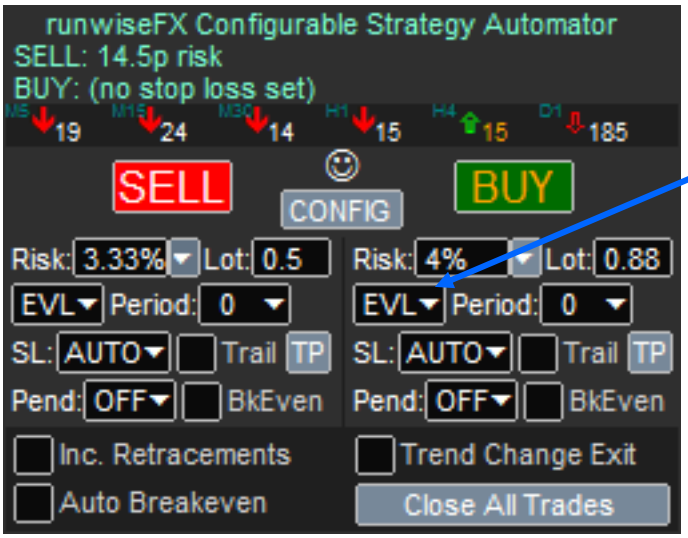
2 CONTROL PANEL

Status Lines >>

Multi-Timeframe Trend Indicator & Pips Moved >>

Controls per Direction >>

Configurable Controls >> (shown here are the supplied rules)



Rule Mode Selection

The control panel provides status, indicator values and GUI controls for interacting with the EA. The main controls are repeated for each direction, i.e. SELL and BUY. This allows for flexible hedging if your broker supports hedging. Most controls are labelled with the exception of the Mode Selection, which is highlighted above.

The settings are preserved if you close the chart down and re-open. This is achieved using MetaTrader's global variables.

2.1 MANUAL TRADING BUTTONS

2.1.1 Trade Open

The SELL and BUY buttons can be used to open a trade manually based on the lot size shown in the Lots text box. If no stop loss is set then the button will be colored orange and it will not be possible to open a trade in that direction.

The magic number used for the trade is configured in the EA input properties and is used by the EA to detect that trade relates it and should be managed by the EA.

Once a trade has been opened the corresponding SELL/BUY button is replaced by a Scale-In and a Close button.

2.1.2 Scale-In

Scale-In allows additional tickets to be opened in the same direction, in order to add to the position. The size of the scale-in ticket is expressed as a percentage of the original trade, e.g. if the original lot size was 1 lot and Scale-In is pressed with 20% then an additional ticket will be opened of 0.2 lot size. To scale-in further then the percentage needs to be increased, i.e. 40% would open another 0.2 lots, in the example, creating a total of 40% extra scale-in.

Obviously, scaling-in adds to the risk relating to the trade if the stop loss is still in the original location.

2.1.3 Trade Close including Partial Close

The close button also has a percentage setting associated with it. This is the percentage of the trade to be closed. 100% will completely close the trade and 50% will close half the total trade size, i.e. it will scale-out 50%. Note, the total position will include any scaled-in tickets.

To progressively scale-out of the trade the close percentage will need to be increased, i.e. it is the percentage of the original trade that was opened rather that what is left open.

2.2 MONEY MANAGEMENT (Risk:/Lot:)

The EA will calculate the lot size for you based on the percentage of your account balance (or equity – whichever is lower) you wish to risk. The percentage should be entered in the Risk text box and can also be selected via the pop-up, which is activated by pressing the ▾ button. You can also enter a fixed amount of the account currency by simply typing the amount in and omitting the % sign.

The pips at risk that is used for the lot size calculation comes from the current position of the hidden stop loss line (yellow) and the current price.

To manually enter a lot size, simply clear the Risk text box and enter the required lots value into the Lots text box.

2.3 RULE MODE SELECTION

The following modes are available that relate to the level of automation of the EA.

MAN	Manual Mode. This turns off the rule engine for when ticks come in form the market or on regular time intervals. However, rules can still be executed on 'script basis', i.e. executed when a user configurable button is pressed, e.g. Close All Trades button of the supplied rules.
EVL	Evaluate Mode. Rules are evaluated on incoming price ticks and regular intervals. However, TRADE_OPEN, SCALE_IN, and TRADE_CLOSE commands will be ignored, in terms of raising alerts or opening/closing trades. However, the alert lines will still be set on the chart. Note, if a rule uses the FORCE_CLOSE command then this can still cause the trade to be closed unless in manual mode. Rules should only use this command if there is a tick box placed on the control panel that can be used to turn this behaviour off, or if called upon a user interaction, e.g. button press. We recommend keeping the EA on at least **EVL** mode, so that the close features of the supplied rules will still work, e.g. Close All Trades button.

ALT	Alert Mode. Rules are evaluated and any TRADE_OPEN and SCALE_IN, TRADE_CLOSE commands will result in an alert but won't actually open/close trades. Note, the alert will only happen if the alert line hasn't already appeared. Note, a FORCE_CLOSE issued command issued by a rule will still close the trade.
TOE	Trade Once then Evaluate Mode. This will act up on TRADE_OPEN SCALE_IN and TRADE_CLOSE (and FORCE_CLOSE) commands but after being executed the mode will switch to **EVL**. This can be used to authorise the EA to do a one-off action, which we refer to as semi-automatic.
TOA	Similar **TOE** but after execution the mode will be switched to **ALT**.
TOC	Trade continuous. This will act up on TRADE_OPEN and, SCALE_IN, TRADE_CLOSE commands and keep doing so. It is important that you test your rules well before this mode is selected, which we refer to as automatic.

2.4 PERIOD SETTING (Period:)

This is the default period used by the automatic stop loss and rules engine. If set to 0 then this will the timeframe of the chart that the EA has been placed on.

If set to 0 then any change to the timeframe of the chart the EA is running on will cause the stop loss and rules to be calculated on that new timeframe. This could cause a trade to opened/closed if the direction is different on the new timeframe, assuming mode is set to something that would permit open/close. To avoid this, either be careful changing the timeframe of the chart the EA is running on or select a particular period rather than 0.

2.5 HIDDEN STOP LOSS

The hidden stop loss is shown by a yellow dashed line on the chart, labelled ***hsl***. This label will also indicate the number of pips from current bid price, or open price if a trade is open, and if trailing mode has been enabled. The hidden stop loss is used as the basis for calculating the risk pips, which is in turn is used to calculate the lot size based on the specified risk

The hidden stop loss, pending lines and take profit all work on the bid price. This prevents these items from being triggered by spikes in the ask price, which could come from broker manipulation as the ask price is not shown on the charts or in the history. The bid price is also the price shown by the candles, so it means you do not have to account for the spread when setting lines from what you see on the chart including indicators that are calculated from the candle prices e.g. moving

averages.

2.5.1 SL Mode (SL:)

By default the EA will calculate the stop loss automatically (AUTO) by using a built-in professional grade indicator and do so based on the timeframe selected by the **Period:** selection list. Other stop loss modes can be selected as follows:

OFF	Turns off stop loss. Can be used to remove unnecessary lines from the chart.
AUTO	Automatic. Uses our built-in indicator to set the stop loss.
RULE	Set by rules. Allows rules to set the stop loss using the SET_HIDDEN_SL command.
MAN	Manual. Allows the stop loss to be set by manually moving the line on the chart.
***n* Pips**	Simple linear stop loss based on the selected number of pips from the current bid price. ★★★★★ **top tip** The list of pips from current price can be configured by the **Main_selectionSLmodePips** EA input property.

2.5.2 Trailing (Trail tick box)

If the **Trail** tick box is ticked then the stop loss after a trade has been open, depending on the stop loss mode selected.

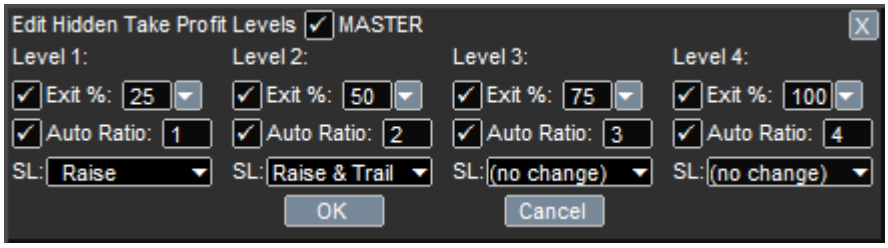
The trail mode won't ever set the stop loss to be further away, regardless of settings. Therefore, if you were trailing by 10 pips but then selected 20 pips, you would need to move the stop loss further away manually. This is a safety feature as an increased stop loss could potentially increase risk.

★★★★★ **top tip** Tailing with AUTO mode is great to capture profit over a number of candles as in automatic mode it gives the trade some breathing room to begin with before the stop loss starts to move. Even then the stop only moves significantly after candle close. However, if you wish to the trailing stop to capture profit of the current live candle or previously closed candle then a set number of pips from bid price would be better, as it works faster.

2.6 HIDDEN TAKE PROFIT

The hidden take profit lines are show as cyan dashed lines on the chart, labelled ***htp***. This label will also indicate the number of pips from current bid price (or open price when trade is open) and the auto risk reward (rr) setting if set.

By default four lines are shown (configurable) that permit the trade to be scaled out. The hidden take profit settings are contained within a pop-up that is shown when you press the **TP** button. Use the **OK** button to make any changes, or **Cancel** if you change your mind.



The take profit pop-up shows the settings for each of the exit levels.

★★★★★
top tip

The EA input properties can be used to change the default values used for the various tick boxes and selection fields. This even includes the number of take profit levels – by default 4 but can be set to a lower number.

2.6.1 MASTER Tick Box

If this is unticked then the hidden stop loss feature will be switched off.

2.6.2 Exit %

If ticked this will perform the partial close of the trade using the percentage of the trade to close shown with the tick box, when the target price is reached. If 100% is selected then this will close the entire trade. If 0 or the box is unticked then no close will take place.

2.6.3 Auto Ratio

If ticked then the take profit target is set automatically based on the risk reward specified next to the tick box. If unticked then the target can be set manually by moving the line on the chart.

2.6.4 Stop Loss Adjustment (SL:)

If set then will adjust the stop loss when the profit target is reached. This can be in terms of raising the stop loss and/or setting stop loss trail mode on. Raising the stop loss means when the first take profit is reached the stop loss is raised to breakeven and when the second take profit line is reached the stop loss is raised to what the first take profit target was set to, and so on. The trail will set the Trail tick box for the trade.

★★★★★ top tip

If you just want to set the stop loss to trail (or raise) when a certain price is reached but not partially close then simply set the exit % to 0 or untick the check box next to the exit percent and set the SL accordingly, i.e. take profit line is still active even if no exit % is set. However, if MASTER tick box is unticked then this will turn this feature off.

2.7 BROKER STOP LOSS & TAKE PROFIT

The EA will also set the broker stop loss and take profit, but further away than the hidden settings. In the case of take profit, it is the take profit line that is set to exit 100% of the trade that is used. The extra distance from hidden should make it less tempting/able for the broker to deliberately hit your stop loss or avoid your take profit.

2.8 HIDDEN PENDING ORDERS

In addition to hidden stop loss and take profit, the EA also supports hidden pending orders. The reason for using hidden pending orders is so that broker isn't tempted to nudge the price/spread to trigger your broker pending order when they believe the market isn't favourable.

To set a hidden pending order, simply tick the hidden pending buy and/or sell checkboxes. This will show the pending line on the chart that can then be moved to the desired price. The mode will automatically change between Limit and Stop depending which side of the current price you place the line.

The EA can either open a trade or alert when the target price is reached. This is controlled by toggling the ALERT/TRADE toggle box that is shown next to pending checkboxes. There are also options to trigger when the price has closed above/below the pending price.

2.8.1 AUTOMATIC SCALE-IN ON PRICE

The EA can be set to automatically scale-in when a target priced is reached. To use this feature tick the corresponding Pending checkbox for the direction that the trade is open for. This will be place a 'pending scale-in' line on the chart that can be positioned to the desired price. When that price is reached the EA will either alert or perform the scale-in, depending on the ALERT/TRADE toggle box setting. The scale-in in percentage is that which is shown next to the manual Scale-In button. Essentially, in auto mode the EA presses the Scale-In button for you.

★★★★★ top tip

It is best to leave the ALERT/TRDE toggle box set to ALERT whilst you position the line, just in case the market moves and touches the default price where the line is placed. When you are happy with the line position you can the switch to TRADE.

2.9 BREAKEVEN

The ‘Breakeven’ checkbox can be used to set a trade for breakeven where the trade will be exited when the price comes back to its open price. If you change your mind whilst the trade is still open, simply untick the breakeven checkbox.

3 BUILT-IN INDICATORS

The EA is supplied with several professional grade indicators that are built into the EA. The first is shown within the control panel that gives the direction the market is moving in, on multiple timeframes. A solid arrow is where there has been a reversal and a hollow arrow is where it’s just currently a retracement. The number next to the arrow is the pips moved in that direction and can used to know how much of the move has been missed. Note, the timeframes shown can be configured via the input property **Main_indiDirPeriods**.

On the chart, the daily, weekly and monthly pivots are shown and the daily support and resistance lines (S1-3 and R1-3). These lines are useful as it can be the price at which a move may stop and not break through, i.e. pivot fail/bounce.

The average daily range is shown in the top left of the chart, together the percentage of that range that the symbol has already done. If that percentage is approaching 100% or exceed 100% that it can be an indication that the symbol may not move much more in the current trading day.

Finally, the current spread is shown top right, color coded if spread is high. The current ask/bid prices are show bottom left in large text. Again color coded if the price is going up, down or the same (yellow). Both of these indicators can be turned off.

4 SUPPLIED RULES

The EA is supplied with rules that permit trades to be opened or closed when the trend changes direction on the control panel set period. This is achieved by using the built-in indicator shown by the trend direction arrows. Note, the period does need to be shown by the arrows, i.e. in **Main_indiDirPeriods**. The Trend Change Exit tick box needs to be ticked for the exit to work, but it does use the FORCE_CLOSE command, so can close trades while in evaluate or alert mode. If the Inc. Retracement tick box is ticked then the rules to work when just a retracement has been signalled, i.e. a hollow arrow shown.

The Auto Breakeven tick box allows breakeven to be set automatically on an open trade when a profit target is reached. The input properties **RWFX_BkEven*** can be used to control this – see 8.

The Close All Trades button will signal to this instance and other instances of the EA on other symbols to close all trades that the EAs are managing, i.e. trades with the magic number that is set for the EA. The FORCE_CLOSE command is again used, so will work if the EA is above manual mode.

5 IMPORTANT CONSIDERATIONS

The EA must remain on the chart of the symbol for which a trade has been opened. Otherwise, the hidden items, including breakeven and auto exit will fail to work.

Your internet connect and login status with your broker must remain in place for the hidden items, including breakeven and auto exit to work. The broker stop loss and take profit will be the fallback if this fails.

A smiley face ☺ is shown in the top right of the EA's control panel that indicates that the EA is allowed and is able to trade (including being able to a close trade (say) when a hidden stop loss is hit). If a straight face 😐 is shown then it means another chart is open for the symbol that has the EA running and that EA is regarded as the one that is managing trades for that symbol. Note, if you closed that other chart then the 😐 should change to ☺.

If you see a sad face ☹ then check trading allowed/login and internet status, as the EA believes it is unable to trade and the hidden items including auto exit and breakeven will not work.

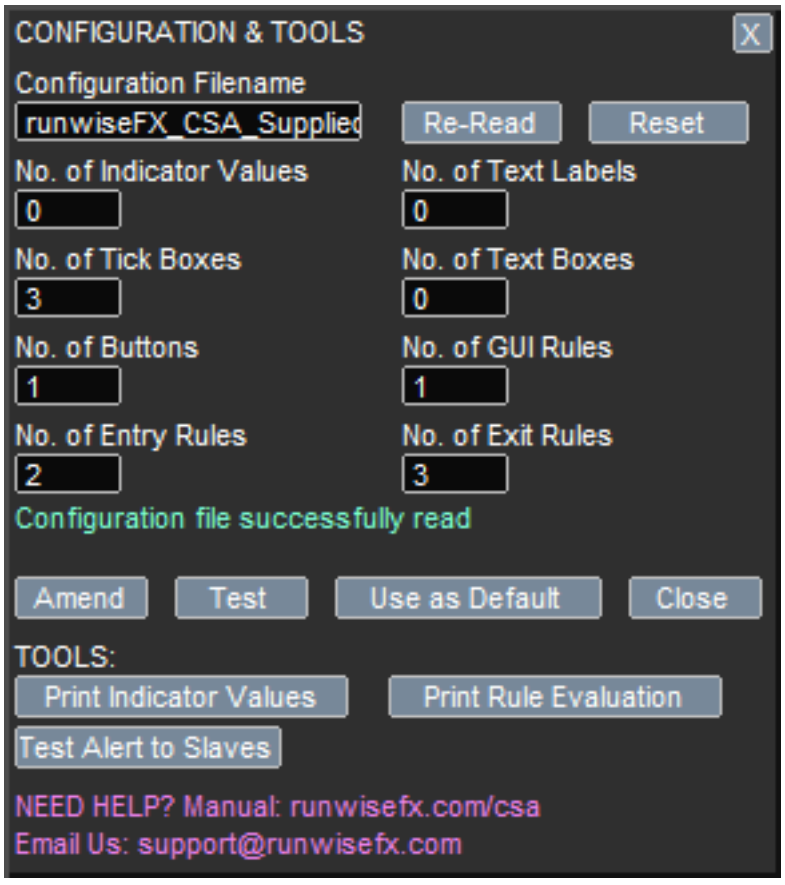
6 STRATEGY AUTOMATION

A big part of the EA is that it can be configured with your trading rules than can alert, open/close trades, adjust stop loss and more, based on indicator/chart object values and other information from MetaTrader. The rules can also be interactive with extra control panel items, such as tick boxes, input boxes, buttons, etc. that the rules can act upon.

Remember we are here to help! This part of the system can seem a bit daunting and there is a learning curve. However, feel free to contact us if you are suck / don't understand: support@runwisefx.com

6.1 Configuration & Tools Pop-up

The configuration is done via a text file that can be created via the pop-up shown when the **CONIG** button is pressed:



The Configuration Filename shows the current configuration file in use by the EA. The default is the **runwiseFX_CSA_Supplied.txt**.

The location of the configuration file can be found by clicking the **File | Open Data Folder** menu option on MetaTrader. Then select the **MQL4\files** folder if running the EA on a normal chart. If using the EA in the strategy tester then the file is located in the **tester\files** folder. Therefore, if you are strategy testing a configuration file then it will need to be copied the MQL4\files folder before is can be used on a regular chart.

The pop-up is populated with how many of each of type of items are defined in the file. You can increase the number and then press the **Amend** button to add new items to the file. The configuration text file can then be edited to fill in the details about the item. Any comments can be inserted start with a single quote. You can use a standard text editor, such as Notepad, to edit the file. However, we recommend Notepad++(https://notepad-plus-plus.org/) as this will give you line numbers and any errors in your file will be reported by line number.

The **Reset** button can be used to clear the form so that details of a new configuration file can be entered. Using separate configuration files allows you work on a new strategy without interfering with the current one.

The **Test** button will do a syntax check of the specified configuration file and report any errors in the file. Errors will be alerted and also reported in the Experts tab. Remember on the strategy tester the alerts go in the Journal tab.

The **Use as Default** button will instruct the EA to use the specified configuration file from now one, including when the EA is restarted. Note, this can be overridden by setting the file **Main_configFileName** EA input property.

The current strategy file that is being used by the EA is set in a file called **runwiseFX_CSA_Cfg_Settings.txt**. Pressing the **Use as Default** button will update this file to point to the new configuration file.

The tools part of the pop-up allows you to print indicator values that are being captured based on the configuration and also the outcome of the rule evaluation. This output appears in the Experts tab.

6.2 Capturing Indicator and Object Values

The first aspect of automating a strategy is to capture the required indicator values. These can be from custom indicators installed on your MetaTrader installation, or built in MetaTrader functions for standard indicators, such as moving averages, stochastic, CCI, RSI, etc. It is also possible to capture values from objects that indicators place on the chart, i.e. listed in **Charts | Objects** pop-up on MetaTrader.

Begin by decided how many values you would like to capture and putting number in the No. of Indicator Values text box of the Configuration pop-up. The click Create/Amend button that will then put template items into the configuration file, which you should then open in a text editor to fill-out the details see 6.1 for details on where the file is located.

6.2.1 Capturing Custom Indicator Values

Example configuration file entry to capture the red line of the TDI (Traders Dynamic Index) indicator for the live candle and current chart timeframe:

```
[indi.TDIred]
indicatorNameOnMetaTrader=TDI
colorIndex=5
period=0
shift=0
inputProperties=
interpretationMethod=A
interpretationParameters=
digits=1
nullValue=AUTO
```

Meaning of each of the lines:

[indi.*<indicatorName>*]	The *<indicatorName>* is what the indicator value will be stored in and can be referred to in the rules, e.g. **i.TDIred** would could be used in the rules to refer the TDI red value. If you are capturing the same indicator value but on multiple timeframes or multiple shift (e.g. live candle and candle just closed) then add this to the indicator name, e.g. TDIredM5 and TDIredH4 could be used for the indicator values from the 5 minute and 4 hour timeframes, respectively. Note, the [] brackets indicates that this a item/section header with details below.
indicatorNameOnMetaTrader	This is name used within MetaTrader, i.e. appear in Navigator panel in MetaTrader. The .ex4 extension can be included or not.
colorIndex	Index 0-7 that the value comes from and can be determined by viewing the Color tab of the indicator properties on MetaTrader. The indexes are show under the # column with the corresponding color that that index represents when the indicator is shown on the chart. In our example, index 5 is used for the red line of the TDI, which is what we are interested in.
period	Period of the timeframe to capture, where 0 is the timeframe that the EA is running on. Else, a particular timeframe can be specified, e.g. M15. Take care with period 0 because if the timeframe is changed on the chart the EA is running on then suddenly in all likelihood the indicator will be returning a different value as it is now from a timeframe.

shift	Shift 0 is the live candle and shift 1 is the candle most recently closed, and so on. For indicators that project into the future, then negative values can be used.
inputProperties	Indicator input properties, i.e. inputs that can be specified when the indicator is place on the chart. If empty then the indicators default properties will be used. Note, the properties must appear in the same order and any true/false parameters should be convert to 1/0, respectively. Note, due to a limitation of MetaTrader and string input will have to give a numerical value.
interpretationMethod	A = as-is, i.e. just return the indicator value as shown on the chart. B = boolean where 1 is returned if the indicator value in not the nullValue and 0 if it is. D = distance (number of bars) to arrow/star/dot, i.e. number of candles to where the indicator value is not the nullValue.
digits	Number of digits after the decimal point when storing and printing the value. If set to AUTO then will use the number of digits shown for the price on the chart.
nullValue	The value of the indicator that represents null (not shown on chart), if it is has one. This is used for interpretationMethod B. AUTO will check for EMPTY_VALUE, -1 or 0. Also can be just set EMPTY_VALUE. Note, EMPTY_VALUE is the official MetaTrader value that an indicator should use to symbolise a null value. However, many indicators do use 0 and some -1.

6.3 Control Panel GUI Items

The configuration can contain additional GUI items that are to appear on the control panel, i.e. labels, tick boxes, text boxes and buttons. The current value of the items can be referred to into the rules, so that the rule can be interacted with. The labels can be used by the rules to show information on the control panel. Further, rules can triggered on the click of the GUI item, e.g. button press, these are called GUI rules and provide a script like behaviour, e.g. close all trades.

The different types of GUI items are configured as follows:

6.3.1 Label GUI Item

```
[gui.label.<labelName>]
defaultValue=<value to appear on the label>
color=<color of label>
```

The **<labelName>** is name that can used in the rules to refer to the GUI item and should be unique and meaningful, e.g. totalProfit. The **defaultValue** is what the label

text should be initially, but can be changed by the rules. **color** is the initial color of the label, bus also can be changed by the rules. If left blank then the default will be color used.

6.3.2 Tick Box GUI Item

```
[gui.tickBox.<tickBoxName>]
caption=<text to appear next to the tick box>
defaultValue=<1 for the box to ticked by default, else 0 >
```

The **<tickBoxName>** is name that can used in the rules to refer to the GUI item and should be unique and meaningful, e.g. trendExitOn. Example:

```
[gui.tickBox.trendExitOn]
caption=Trend Exit
defaultValue=0
```

Creates a tick box with the caption 'Trend Exit', which is not ticked by default. The tick box can be referred to in the rules by **g.trendExitOn** and will have the value 1 if ticked else 0 if not ticked.

6.3.3 Text Box GUI Item

```
[gui.textBox.<textBoxName>]
caption=<text to appear next to the text box>
defaultValue=<default text to place in the text box>
```

The **<textBoxName>** is name that can used in the rules to refer to the GUI item and should be unique and meaningful, e.g. pipTarget. Example:

```
[gui.textBox.pipTarget]
caption=Pips Target
defaultValue=40
```

Creates a text box with the caption 'Pips Target' with the default value of 50. The text box can be referred to in the rules by **g.pipTarget** and will have the value of the text contained in the box.

6.3.4 Button GUI Item

```
[gui.button.<buttonName>]
defaultValue=<text to appear on the button>
```

The **<buttonName>** is name that can used in the rules to refer to button and should be unique and meaningful, e.g. closeInProfitTrades. Example:

```
[gui.button.closeInProfitTrades]
defaultValue=Close In Profit Trades
```

Creates button with the text 'Close In Profit Trades'.

Note, to add a rule that is executed when the button is pressed, the button name should be used in the rule header, for example:

```
[rule.gui.closeInProfitTrades]
,t.profit,>,0,TRADE_CLOSE
```

6.4 Specifying Rules

Rule are specified by the [rule.*] section header and a series of lines. Each of the lines has several comma separated fields. The format is:

```
[rule.<entry|exit|gui>.ruleName]
<flags>,<operand1>,<operator>,<operand2>,<commands>,<failComment>
```

For example, an entry rule for the popular TDI indicator (Traders Dynamic Index) might be:

```
[rule.entry.TDIentry]
N,i.tdiGreen,/>,50,AND,"green not crossed 50"
N,i.tdiRed,/>,i.tdiYellow,TRADE_OPEN,"red not crossed yellow"
```

This will open a trade on the open of a new bar (signified by the flag N) when the TDI green line has crossed 50 and the TDI red line has crossed the TDI yellow line. Note, the '*/*' next to the greater than sign '**>**', is used to indicate that the '**>**' should be flipped to a '**<**' when evaluating the rule for a sell. The optional fail comment is used to show on the status whether it is the green or red line that is being waited for.

Other rules types available are **exit** that are evaluated when trade open and **gui** rule, for which an example was given in the previous section.

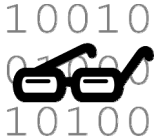
Here is an example exit rule, again using the TDI indicator:

```
[rule.exit.TDIexit]
,i.tdiGreen,/<,50,TRADE_CLOSE,"green okay"
```

This will close the trade when the TDI green crosses back over 50. This the rule doesn't just operate on the open of new bar, but is evaluated on every tick. The optional fail comment will write on the status "green okay" if rule is active but green not yet crossed 50.

GUI rules are evaluated on the click of a GUI item, e.g. button. Entry rules are evaluated on incoming ticks from the market and at regular intervals. Exit rules are evaluated when a trade is open. Entry rules are still evaluated even when a trade is open in case a scale-in is required via the SCALE_IN command. However, any TRADE_OPEN commands are ignored once a trade is open for the direction.

GUI rules and entry rules are evaluated in both directions (sell and buy). Hence, any TRADE_OPEN commands will open a trade in the direction that is being evaluated and for which the rules match.



Although entry and exit rules are evaluated on regular timer ticks (currently every 1/3 of second) as well as market ticks, any trade open/scale-in/close commands will be ignored unless it is a tick from the market. This prevents the rules from trying to open/close a trade when the market is closed, which would result in repeated errors.

The **<flags>** can be empty or one of **N,B,S,$,%**. N means evaluate line on a newly opened bar (candle). **B** means evaluate line when evaluating for buy, otherwise ignore the line. **S** means evaluate the line when evaluating for a sell, otherwise ignore the line. $ means evaluate as a string (text). **%** means evaluate as an integer (whole number), i.e. any floating point numbers will be rounded up.

The **<operator>** can be one of **=,<>,<,>,>=,<=,contains,notcontain**. The **contains** operator will look of operand 1 inside of another operand 2 and match if is there. The **notcontain** will match if the operand cannot be found inside operand 2. As mentioned in the examples, a '**/**' can precede the operator that will invert the operator when evaluating for a sell. This can avoid the need for separate lines with **B** and **S** flags.

A variety of operands can be used. Please contact us with your requirements.

A variety of commands are available, see 6.4.1. **<command>** can also be **AND** which means the following line(s) must match also, or **OR** which means either this line or the next one or one after if **OR** is still specified. Multiple commands can be specified separated by '|' (vertical bar). If a command is preceded by a '**!**' then the command is only executed if the expression does not match.

The **<failComment>** is optional and is displayed in the status lines on the control panel if rule fails to match on the line. It can be used to know why the rule is not performing the action associated with it. Note, if the comment contains a comma then don't forget to include double quotes around the text, or you may just wish to enclose double quotes around the fail comment for clarity.

Rules can have multiple lines that end in a command(s). However, the END_EVAL command can be used to stop the evaluation of the particular rule, regardless of what follows.

If any fields on rule logic line contain a '**,**' (comma) then place double quotes around the field so that the parser doesn't get confused, as commas are also used to delimitate fields.

6.4.1 Commands

The following commands can be used in rules and appear as the 4th field on the logic line of a rule. Remember multiple commands can be separated by '|' and if a command is preceded by '!' then it is only executed if the expression before it does not match.

Parameters can use single quotes for strings. Parameters can also reference operands by enclosing them inside curly brackets {}. E.g.:
`ALERT('TDI yellow is now {i.tdiYellow}')`
This would raise an alert and text would include the value of tdiYellow indicator.

COMMAND & PARAMETERS	DESCRIPTION
ALERT(<msg>)	Will issue an alert with the text supplied in <msg>. Note, the alert will be push notified / emailed if the EA has been configured to do this. You must have logic in the rule to prevent repeated alerts that are not desired.
ALERT_LOCAL(<msg)	Similar to alert. However, we only be shown in the alert pop-up and not push notified or emailed, even if the EA has been configured to that.
AND	Not strictly a command but is used to join logic lines together. AND means the line and lines above must match the following lines (see OR as well).
CLEAR_BREAKEVEN	Will clear the breakeven tick box on the EA control panel for the direction being evaluated (see SET_BREAKEVEN).
END_EVAL(<failComment>)	Will stop the rule from being evaluated any further. An optional <failComment> will be shown on the status on the EA control panel, which is intended to indicate why the rule is not being evaluated any further.
FORCE_CLOSE(<prct>)	Will close any open trade with the specified percentage of the trade to close. If <prct> is not specified then the entire trade will closed, including any scale-in tickets. The command will as long as the EA is not set to manual mode for the direction (see TRADE_CLOSE that only has an effect if the EA is in alert/trade mode for the direction).
GUI_SET_LABEL(<name>;<text>; <color>;<size>)	Will set GUI control panel text label item with supplied text and optional color and font size.
MESSAGE_CONFIRM(<msg>)	Will pop-up a message dialog box showing the supplied <msg>. If the Cancel button is pressed then the rule will not be evaluated any further. Useful for confirming actions, e.g. button press, with the user. Must only be used in GUI rules, as these are only executed on user click, i.e. when user is present. If the dialog box is not answered then the EA will be unable to process any further, including hidden stop loss, etc.
OR	Not strictly a command but is used to join logic lines together. OR means the current line or other lines above or below that also have OR, must match (see AND as well).

PLAY_SOUND(<wavFileName>)	Will play wav file located in Sounds folder of Data Folder. If no parameter is specified then any playing sound will be stopped.
PRINT(<msg>)	Will print, i.e. write, supplied message to log.
SCALE_IN(<prct>)	Will perform scale-in by either supplied <prct>, i.e. percentage of original trade – what has already been scaled in. Or, if <prct> is not specified then will scale-in based on corresponding setting on EA control panel.
SCREENSHOT	Will take screenshot of current chart that the EA is running on and place in the File folder of the Data Folder. Screen shot files are name rwfx_ss_* and can be controlled by **Gen_screenShot*** input properties.
SEND_MAIL(<subject>;<msg>)	Will email (if MetaTrader has been configured to do this) with the supplied subject and message.
OBJ_CREATE(<name>;<type>)	Will create chart object of specified name and type. If <name> starts with '*' then the runwiseFX application ID will be inserted that allows the object to automatically deleted if the EA is removed from the chart. Note, initially objects are created with a location so they cannot be seen. TIP: Rule of type initGui can be used to create objects before the EA control panel is created, so they appear behind the control panel. <type> = object type **OBJ_*** with the OBJ_ omitted, e.g. HLINE will create a horizontal line object. A full list of object types can be found at: http://docs.mql4.com/constants/objectconstants/enum_object
OBJ_SET(<name>; <propertyIDValue>; <value>)	Will set object property to have supplied numerical value. The <propertyIDValue> is the second column of the table show here: http://docs.mql4.com/constants/objectconstants/enum_object_property. Note, other OBJ_SET_* commands are available that make it easier to set certain properties and are also required for text based properties.
OBJ_SET_COLOR(<name>;<color>; <style>)	Will set object color and optionally style. <color> can be RGB comma separated or one of web –color constants, e.g. clrMagenta, see: http://docs.mql4.com/constants/objectconstants/webcolors. Don't forget if using commas in commands then will need to enclose the entire command field, of the logic line, in double quotes, as commas are also used to delimit each of the fields in the logic line. For <style> see http://book.mql4.com/appendix/styles for available styles, e.g. 0 = solid, 1 = dashed, etc.
OBJ_SET_FONT(<name>;<fontSize>; <fontName>)	Will set object font size and font name. If either parameter is blank (or in the case <fontName> not supplied) then no change will be made to that property.

OBJ_SET_POSITION(<name>;<x>;<y>; <corner>)	Will set position of the object on the chart with supplied X and Y co-ordinates and corner settings. Corner can be one of **LU** (left upper), **LL** (left lower), **RL** (right lower), **RU** (right upper). Note, if any parameter is blank then it will not be set, also <corner> may be omitted.
OBJ_ SET_PT(<name>; <price1>;<time1>; <price2>;<time2>;…)	Will set object price and time. This can be used for objects that are placed on the chart at a particular time and price. Note, <price2> and <time2> are optional. <time1> can also be omitted just to set price, e.g. for horizontal line. If <price1> is blank but <time1> is set then just TIME1 will be set, e.g. for vertical lines.
OBJ_SET_TEXT(<name>;<text>; <color>)	Will set the text property of the object with the supplied text and optional color (see OBJ_SET_COLOR for more details about setting object colors)
SET_VAR(<name>; <value>;<symbol>; <temp>)	Will set a global variable of supplied name and value. Note, value has to be a number. Optional <symbol> can also be specified to set of a specific symbol, which if '*' will cause the variable for all symbols to be set. If the optional <temp> is set as TEMP then the global variable will be marked as temporary, i.e. not preserved between closedown/restart of MetaTrader.
SEND_NOTIF(<msg>)	Will send push notification email (if MetaTrader has been configured to do this) with the supplied message.
SET_BREAKEVEN	Will set the breakeven tick box on the EA control panel for the direction being evaluated. This command should only be issued when a trade is open and in profit – if not in profit then would immediately exit the trade (see CLEAR_BREAKEVEN).
SET_PEND(<price>; <action>)	Set pending line for the direction being evaluated, including setting type and mode. <action> is one of **ALT** or **TRD**. Note, the limit/stop type will be set depending on where the line is placed in relation to the price. However, if the trade is open then the type will be set to scale-in, provided the price is appropriate for a scale-ion, e.g. if buy then price needs to be above current price. The <action> can be omitted to leave as is.
SET_PEND_PRICE(<price>)	Set the pending line price for the direction being evaluated. However, the price will not be updated if it causes the pending line to jump over current price, e.g. from Limit to Stop type, i.e. is only intended to update the price not the type (Limit/Stop).
TRADE_CLOSE(<prct>)	Will close any open trade (or alert if alert mode is set) with the specified percentage of the trade to close, if the mode is set to trade. If <prct> is not specified then the entire trade will closed, including any scale-in tickets. See FORCE_CLOSE that will work regardless of mode setting unless the mode is manual.
TRADE_OPEN(<riskAdjustPrct>)	Will open a trade in the direction that is being evaluated using the settings on the EA control panel, provided mode is set to trade. Will alert if mode is set to alert. If a trade is already open then no action will

	be taken. Note, if you want to open additional tickets then use the SCALE_IN command. The optional <riskAdjust> can be used to adjust the risk that has been specified on the EA control panel, e.g. if risk is 3% of account but this parameter is 10, i.e. 10%, then the risk used will be 3.3%. Negative values can be used to reduce risk. This parameter allows rules to adjust risk based the probability of the trade being successful.

7 MUTLI-ACCOUNTS

Multiple instances of the EA on different accounts, i.e. on different instances of MetaTrader, can talk to each other provided they are on the same computer. This can enable actions on one account to be automatically replicated on the other accounts, using a master/slave principle. This works better than a trade copier as trades can be opened/closed at the same time, where as a trade copier needs to see the trade opened on one account before it can be opened on the other and similar for close. This creates an inherent delay and the potential for slippage between accounts.

To active multi account support set the **Main_multiAccountMode** input property of the EA to Master on the account you want to the be master (a M should appear above the CONFIG button) and set **Main_multiAccountMode** to slave on the other accounts (a S should appear). Actions performed on the master account should be replaced on the slave accounts.

★★★★★ **top tip** You can test the link via the CONFIG button and then click Test Alert to Slaves button on the Configuration & Tools popup.

It is possible to share the same configuration file across multiple instances of MetaTrader on the same computer. To do this set **Main_configFileName** EA input property to the configuration filename and set **Main_configInCommonFolder** input property to true. The configuration file should be placed in the common data folder. The common data folder can be found by going to the **Tools | MetaQuotes Language Editor** and then in that tool clicking on to **File | Open Common Data Folder** menu.

8 EA INPUT PROPERTIES

★★★★★ **top tip** Any changes to the EA input properties can be applied to other charts by saving a template within MetaTrader. Please consult the MetaTrader help files on this.

Variable	Description
Important_defaultStopLossMode	Default stop loss mode
Important_defaultStopLossTrail	Default setting for the stop loss trail tick box
Important_magicNumberToUse	Magic number for trades that the EA opens. The EA will ignore trades with a different magic number.
Important_lots	Lot size to be used if risAmount is not set (blank). If this input is set the Important_riskAmount should not be, i.e. be blank. The value can still be changed on the control panel.
Important_riskAmount	Risk amount to be used. Can be % of account/equity (whichever is smaller) or fixed amount (omit percentage). The value can still be changed on the control panel.
Important_tpRiskRewardRatios	Take profit risk reward ratios (comma separated) for each level.
Important_tpExitPrcts	Take profit exit percentages (comma separated) for each level
Important_tpAdjustSLasTargetsReached	Take profit stop loss adjust on target setting (comma separated) for each level. 0 = no action, 1 = raise SL, 2 = trail SL, 3 = raise & trail SL
Main_additionalGUISizing	Additional pixels to add between control panel GUI items. Useful if system font sizing above normal is being used.
Main_alert*	Allows various alerts to be turned on and off
Main_averageDailyRangeDays	Days used for ADR cacluation. Recommend leaving as is.
Main_averageRangeCorner	Chart corner where ADR is displayed

Variable	Description
Main_averageRangeMode	Switch from ADR to ATR (Average True Range)
Main_averageRangeX	X location of ADR
Main_averageRangeY	Y location of ADR
Main_averageTrueRangeDays	Days used for ATR calculation. Recommend leaving as is.
Main_breakevenThresholdPips	Pip profit below which breakeven close will occur (if set)
Main_brokerSLTPAdjustmentThresholdPips	Pips difference between calculated broker SL/TP and actual for modification to happen
Main_brokerStopLossExtraPips	Extra pips to add to hidden SL for broker SL (or % of Daily Range)
Main_brokerStopLossMoveWithHidden	If *true* will modify broker SL if hidden SL is moved
Main_brokerTakeProfitExtraPips	Extra pips to add to hidden TP for broker TP (or % of Daily Range)
Main_brokerTakeProfitMoveWithHidden	If *true* will modify broker TP if hidden TP is moved
Main_confirm*	Allows various confirmation message boxes to be turned on and off
Main_configFileName	If set then this file will be used as the configuration file for the EA.
Main_configInCommonFolder	If set the common data folder will be used when reading/writing the configuration file of the EA. This can be used to share the same configuration file for multiple instances of the EA on different accounts.

Variable	Description
Main_configInUnicode	Should be set if configuration file has been save in Unicode (international) format
Main_defaultMode	Default rule mode to be used when EA loaded onto chart
Main_defaultPeriod	Deafult period to be used when EA loaded onto chart
Main_maxSlippagePips	Maximum slippage when opening tickets, if -1 then uses spread
Main_maxSpreadForAutoTradeOpen	Maximum spread for which a trade open will be allowed to go ahead, in pips. Useful to prevent the EA from automatically opening a trade when the spread is especially bad.
Main_maxSpreadForManualTradeOpen	As Main_maxSpreadForAutoTradeOpen but for when a trade is manually being opened
Main_pendingBuyOnBid	If *true* will alert/trade pending when bid price reaches target price
Main_indiDirPeriods	Comma separated list of periods for which the built-in direction arrows should be calculated and shown for
Main_indiDirShow	If set the will shown the built-in direction arrows on the control panel of the EA
Main_hideTPLinesIfTradeNot OpenUnlessSetManual	If set then the hidden take profit lines will not be shown until a trade is open. This can be useful to de-clutter the chart prior to trade open.
Main_maxSlippagePips	Maximum slippage allowed when opening/closing trades, in pips
Main_pendingCancelOther	If *true* then opening of pending will cancel any in other direction

Variable	Description
Main_resetAfterTradeClosed	If *true* will reset setting to default after trade closed
Main_scaleInPrctDefault	Default percentage to scale-in by
Main_screenShotOnAutoOpen	Take screenshot when trade is opened automatically. Screenshots appear in the MQL\files directory of the Data Folder and start with 'rwfx_ss_'. Further control of screenshots can be made via inputs Gen_screenShot*.
Main_screenShotOnManualOpen	Take screenshot when trade is opened manually.
Main_selection*	Allows various selection lists to be altered
Main_show*	Allows various items to be shown or not
Main_stopLossCalcTimeframe	Default timeframe for auto stop loss
Main_stopLoss[Min|Max]Pips	Min/max of calculated stop loss (can be % of Daily Range)
Main_tpAddSpread	If *true* will add spread to calculated take profit risk reward ratio prices
Main_tpExtraPipsToAdd	Extra pips to add to calculated TP (say to cover commission)
Main_useAskForSLTP	Use Ask price for hidden stop loss and take profit where it would be used if broker
Box_*	Use to position GUI control panel where you would like
Style_*	Use to control the style of the various lines
Color_*	Use to control the color of various items

Variable	Description
Gen_fallbackPointToPipDivider	If the EA can't work out automatically how to convert points to pips then this value will used. The default is 10, which is correct for '5 digit brokers', i.e. that quote 10^{th} of a pip. For '4 digit brokers', i.e. who don't quote fractional pips, then this value would need to be 1.

9 CONTACTS

Runwise Limited
The Tramshed
Walcot Street
Bath
BA1 5BD
United Kingdom

Email: support@runwisefx.com
Web: www.runwisefx.com

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